

CLAIMS

Having thus described the invention, what is claimed is:

1. A method of manufacturing personal care absorbent articles in a format which includes defining a stream of workpieces connected to each other along a web sausage having an indefinite length, a respective such personal care article having a front portion including a front edge, a rear portion, and a crotch portion between the front portion and the rear portion, the method comprising:
  - (a) for a given workpiece in the web sausage, defining the front portion, the rear portion, and the crotch portion;
  - (b) defining a fastening area in the front portion for receiving fastener material thereon;
  - (c) forming first and second fault lines in the workpiece on opposing sides of the fastening area, the first and second fault lines being oriented in directions generally extending between the front portion and the rear portion when a blank of the workpiece is laid out flat;
  - (d) applying fastener material over the respective first and second fault lines, the fastener material, as applied, extending across, and thus bridging, the respective fault lines, and being releasably secured to the fastening area, and non-releasably secured to the front portion outwardly of the respective fault lines; and
  - (e) separating individual such workpieces from the web sausage as such personal care articles.

2. A method as in Claim 1, including cutting leg cut-outs in the web sausage between the respective workpiece and adjacent workpieces, and correspondingly cutting into the respective fault lines in so cutting the leg cut-outs.

3. A method as in Claim 2 wherein each of the first and second fault lines is formed as a cut line of one or more elongate cuts and minor, if any, web connections therebetween, with uncut web portions at opposing ends of the cut line, sufficiently strong, in combination, to support integrity of the front portion across the fault lines, the cutting into the fault lines in cutting the leg cut-outs being effective to remove the uncut web portions adjacent the leg cut-outs and to thereby communicate with the cut line, the method further including separating material along a front edge of the workpiece thereby to form the front edge of the personal care article and to separate the substantial uncut web portion at the front edge and thereby further communicate with the cut line, such that the fastener material provides primary support of the front portion across the fault lines.

4. A method as in Claim 2, including forming each of the first and second fault lines as a cut line of one or more elongate cuts and minor, if any, web connections therebetween, with substantial uncut web portions at opposing ends of the fault line, and wherein the cutting into the fault line portion at cutting of the leg cut-out comprehends removing the entirety of the uncut web portion at the respective end of the fault line.

5. A method as in Claim 1, including forming each of the first and second fault lines as a cut line of one or more elongate cuts and minor, if any, web connections therebetween, with relatively shorter-length perforation cuts and corresponding effective uncut web support connections between such perforation cuts at opposing ends of the one or more elongate cuts.

6. A method as in Claim 5, the method further including separating material along a front edge of the workpiece thereby forming the front edge of the personal care article and thus removing the effective support connections at the front edge, such that the fastener material provides primary support of the front portion across the fault lines.

7. A method as in Claim 1, including forming each of the first and second fault lines as a line of relatively uniformly formed and uniformly spaced perforations.

8. A method as in Claim 7, including cutting leg cut-outs between the respective workpiece and adjacent workpieces in the web sausage, and correspondingly removing first perforated end portions of the respective fault lines in so cutting the leg cut-outs, and separating material along a front edge of the workpiece and thereby forming the front edge of the personal care article and correspondingly separating second perforated end portions of the respective fault lines at the front edge, such that the fastener material provides substantial support of the front portion across the fault lines in combination with support provided by web connections between respective ones of the perforations.

9. A method as in Claim 1, including forming each of the first and second fault lines as a line of relatively uniform perforations with relatively short and uniform uncut web portions between the respective perforations, and relatively longer uncut web portions at opposing ends of the respective line of perforations.

10. A method as in Claim 9, including cutting leg cut-outs between the respective workpiece and adjacent workpieces in the web sausage, and correspondingly removing portions of the respective fault lines in so cutting the leg cut-outs, the removing of the portions of the fault lines in cutting the leg cut-outs being effective to remove uncut web portions adjacent the leg cut-outs and to communicate with the line of

perforations, the method further including separating material along a front edge of the workpiece thereby to form the front edge of the personal care article and to separate the substantial uncut web portion at the front edge and thereby further communicate with the line of perforations, such that the fastener material provides substantial support of the front portion across the fault lines.

11. A method as in Claim 1, including forming each of the first and second fault lines in the workpiece as a line of relatively uniform perforations or cuts.

12. A method as in Claim 1, including forming each of the first and second fault lines in the workpiece as a complete severance across the entirety of the front portion of the workpiece.

13. A method as in Claim 1 including forming the fault lines as pressure lines which are defined by a process of crushing web material which responds to a crushing force, using a dull knife against an anvil roll, and reserving uncrushed web portions at least at opposing ends of the respective pressure lines.

14. A method as in Claim 1 including employing, as the fastening material, first and second fasteners extending across, and thus bridging, the respective first and second fault lines.

15. A method as in Claim 14 including employing, as the fastening material, first and second fasteners extending across, and thus bridging, the respective first and second fault lines, the first and second fasteners employing first fastening material effective to interact with second different fastening material in the fastening area.

16. A method as in Claim 1, including fabricating such personal care article using first and second front and rear portion webs, including bringing the rear portion web and the front portion web into facing relationship with each other, and forming side seams connecting the front and rear portion webs to each other, outwardly of such fault lines, thereby to form individual workpiece precursors of such personal care articles, having joined front and rear portions.

17. A method as in Claim 1, including fabricating such personal care article from at least a unitary outer layer web, including cutting leg cut-outs in such web to separate adjacent crotch portions of adjacent workpieces in the stream of workpieces, and bringing the rear portion and the front portion of such web into facing relationship with each other, and forming side seams connecting the front and rear portions of the web to each other, outwardly of such fault lines, thereby to form individual workpiece precursors of such personal care articles, having joined front and rear portions.

18. A method of manufacturing personal care absorbent articles in a format which includes defining a stream of workpieces connected to each other along a web sausage having an indefinite length, a respective such personal care article having a front portion including a front edge and a fastening area on the front portion, a rear portion, a crotch portion between the front portion and the rear portion, and leg openings on opposing sides of said crotch portion, the method comprising:

- (a) for a given workpiece, forming first and second fault lines in the workpiece on opposing sides of the fastening area, the first and second fault lines generally extending from a front edge of the workpiece to the respective leg openings, the first and second fault lines having centrally located relatively weaker portions, and relatively stronger portions adjacent the leg openings and the front edge;
- (b) applying first and second fasteners over the respective first and second fault lines;

- (c) releasably securing the first and second fasteners to the fastening area;
- (d) non-releasably securing the first and second fasteners to the front portion outwardly of the respective fault lines;
- (e) maintaining the first and second fasteners unsecured to the front portion between the fastening area and the fault lines;
- (f) cutting away the relatively stronger portions of the fault lines adjacent the leg openings and adjacent the front edge thereby to form the front edge, such that material of the front portion is precluded from independently supporting integrity of the front portion across the fault lines; and
- (g) separating individual such workpieces from the web sausage as such personal care articles.

19. A method as in Claim 18, including cutting away the relatively stronger portion adjacent the leg openings concurrently with forming at least a portion of the respective leg opening in a workpiece precursor of such personal care article.

20. A method as in Claim 18, including cutting away the relatively stronger portion adjacent the front edge concurrently with forming the front edge in a workpiece precursor of such personal care article.

21. A method as in Claim 18, including fabricating such personal care article using a front portion web and a rear portion web, including bringing the rear portion web and the front portion web into folded over engaging relationship with each other, and forming side seams connecting the front portion web and the rear portion web to each

other, outwardly of such fault lines, thereby to define individual workpiece precursors of such personal care articles.

22. A method of manufacturing personal care absorbent articles in a format which includes defining a stream of workpieces connected to each other along a web sausage having an indefinite length, a respective such personal care article having a front portion including a front edge, a rear portion, a crotch portion between the front portion and the rear portion, and leg openings on opposing sides of the crotch portion and between the front portion and the rear portion, the method comprising:

- (a) drawing a front portion web and a rear portion web in parallel and transversely spaced juxtapositions along an operations path;
- (b) defining fastening areas in the front portion web, and thereby defining locations in the front portion web for development of respective workpieces in combination with adjoining areas of the rear portion web;
- (c) forming first and second fault lines in the front portion web on opposing sides of the respective fastening areas, the first and second fault lines being oriented in directions generally extending between the front portion web and the rear portion web when the front portion web and the rear portion web are displaced from each other and arranged in a common relatively flat surface, the first and second fault lines having centrally located relatively weaker portions, and relatively stronger end portions adjacent the leg openings and adjacent a front edge of the respective workpiece;
- (d) applying fastener material over the respective first and second fault lines, the fastener material, as applied, extending across, and thus bridging, the respective fault lines, and being releasably secured to the fastening area, non-releasably secured to the front portion web outwardly

of the respective fault lines, and unsecured to the front portion web between the fastening area and the fault lines;

- (e) securing crotch elements to the front portion web and the rear portion web at respective workpiece locations, and thereby defining the respective workpieces and providing transverse direction linking connections between the front portion web and the rear portion web at the respective workpieces;
- (f) cutting away the relatively stronger end portions of the fault lines such that material of the front portions of the resulting personal care articles are precluded from independently supporting integrity of the front portions of the personal care articles across such fault lines;
- (g) bringing the rear portion web and the front portion web into folded over engaging relationship with each other and forming side seams connecting the front portion web and the rear portion web to each other outwardly of the fault lines on a respective workpiece, thereby to define individual personal care articles; and
- (h) separating individual such personal care articles from the web sausage, thereby to form individual such personal care articles.

23. A method as in Claim 22, including cutting leg cut-outs in the web sausage between a respective workpiece and adjacent workpieces, and correspondingly cutting into the respective fault lines in so cutting the leg cut-outs.

24. A method as in Claim 23 wherein the fault lines are formed as cut lines of one or more elongate cuts and minor, if any, web connections therebetween, with uncut web portions as the stronger end portions sufficiently strong, in combination, to

support integrity of the front portion across the fault lines, the cutting into the fault lines in cutting the leg cut-outs being effective to remove the uncut web portions adjacent the leg cut-outs and to thereby communicate with the cut line, the method further including separating material along the front portion web thereby to form the front edges of the personal care articles and to separate the substantial uncut web portion at the front edge to thereby further communicate with the cut line, such that the fastener material provides primary support of the front portion across the fault lines.

25. A method as in Claim 23, including forming the fault lines as cut lines each having one or more elongate cuts and minor, if any, web connections therebetween, with uncut web portions as the relatively stronger end portions of the fault lines, and wherein the cutting into the fault lines at cutting of the leg cut-outs comprehends removing the entirety of the relatively stronger uncut web end portions at the respective ends of the fault lines.

26. A method as in Claim 22, including forming respective such fault lines as cut lines of one or more centrally-disposed elongate cuts and minor, if any, web connections therebetween, with relatively shorter-length perforation cuts and corresponding effective uncut web support connections between such perforation cuts at the relatively stronger ends.

27. A method as in Claim 26, the method further including separating material along the front portion of the workpiece thereby forming the front edge of the personal care article and thus separating the effective support connections at the front edge, such that the fastener material provides primary support of the front portion across the fault lines.

28. A method as in Claim 22, including forming each of the first and second fault lines as a line of relatively uniformly formed and uniformly spaced perforations.

29. A method as in Claim 28, including cutting leg cut-outs between a respective workpiece and adjacent workpieces in the web sausage, and correspondingly removing first perforated end portions of the respective fault lines in so cutting the leg cut-outs, and separating material along the front portion of the workpiece and thereby forming the front edge of the respective personal care article and correspondingly separating second perforated end portions of the respective fault lines at the front edge, such that the fastener material provides substantial support of the front portion across the fault lines in combination with support provided by web connections between respective ones of the perforations.

30. A method as in Claim 22, including forming the fault lines as lines of relatively uniform perforations with relatively short and uniform uncut web portions between the respective perforations, and relatively longer uncut web portions at opposing ends of the respective lines of perforations.

31. A method as in Claim 30, including cutting leg cut-outs between a respective workpiece and adjacent workpieces in the web sausage, and correspondingly removing portions of the respective fault lines in so cutting the leg cut-outs, the removing of the portions of the fault lines in cutting the leg cut-outs being effective to remove the uncut web portions adjacent the leg cut-outs and to communicate with the line of perforations, the method further including separating material along the front portion of the workpiece thereby to form the front edge of the personal care article and to separate the substantial uncut web portion at the front edge and thereby further communicate with the line of perforations, such that the fastener material provides substantial support of the front portion across the fault lines.

32. A method as in Claim 22 including employing, as the fastening material, first and second fasteners extending across, and thus bridging, the respective first and second fault lines.

33. A method as in Claim 32 including employing, as the fastening material, first and second fasteners extending across, and thus bridging, the respective first and second fault lines, the first and second fasteners employing first fastening material effective to interact with second different fastening material in the fastening area.

34. A personal care absorbent article, comprising:

- (a) a front portion including an outer front edge and opposing first and second side edges;
- (b) a rear portion including an outer rear edge;
- (c) a crotch portion extending between said front portion and said rear portion;
- (d) leg openings on opposing sides of said crotch portion;
- (e) a fastening area disposed on said front portion, inwardly of said first and second side edges;
- (f) first and second fault lines in the front portion which preclude material of the front portion from independently supporting integrity of the front portion across such fault lines, the respective first and second fault lines being disposed between the fastening area and the respective first and second side edges; and

(g) first and second fasteners releasably secured to the fastening area, and non-releasably secured to the front portion outwardly of the respective fault lines, and providing at least partial support of integrity of the front portion across the fault lines.

35. A personal care absorbent article as in Claim 34 wherein said fault lines are cut lines with no front portion material extending across the fault lines.

36. A personal care absorbent article as in Claim 34 wherein said fault lines comprise lines of perforations with limited lengths of front portion material extending across the fault lines.

37. A personal care absorbent article as in Claim 34 wherein said fasteners comprise hook-type fasteners engageable with loop material at said fastening area.

38. A method of manufacturing personal care absorbent articles in a format which includes defining a stream of workpieces connected to each other along a web sausage having an indefinite length, a respective such personal care article having a front portion including a front edge and a fastening area on the front portion, a rear portion, a crotch portion between the front portion and the rear portion, and leg openings on opposing sides of said crotch portion, the method comprising:

(a) for a given workpiece, forming first and second fault lines in the workpiece on opposing sides of the fastening area, the first and second fault lines generally extending substantially from the front edge of the workpiece to the respective leg openings, the first and second fault lines having points of web-attachment sufficient, in combination, to maintain the integrity of the workpiece as such workpiece proceeds through manufacture;

- (b) applying first and second fasteners over the respective first and second fault lines;
- (c) releasably securing the first and second fasteners to the fastening area;
- (d) non-releasably securing the first and second fasteners to the front portion outwardly of the respective fault lines; and
- (e) separating individual such workpieces from the web sausage as such personal care articles.

39. A methods as in Claim 38 wherein each point of web-attachment is defined between adjacent cuts and/or perforations on a respective fault line.

40. A method as in Claim 38, including fabricating such personal care article using a front portion web and a rear portion web, including bringing the rear portion web and the front portion web into folded over engaging relationship with each other, and forming side seams connecting the front portion web and the rear portion web to each other, outwardly of such fault lines, thereby to define individual workpiece precursors of such personal care articles.